

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

(Claims 1-3 have been cancelled.)

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4.(Original) A method of storing audio data on a CD, comprising:  
storing in the audio portion of said CD a first two track audio signal, wherein said first two track audio signal is reproducible by playing said CD on a conventional audio CD player;

storing additional audio data on said CD outside of said audio portion; and  
storing control information on said CD, wherein said first two track audio signal and said additional audio data can be combined through use of said control information to reproduce a unified audio signal.

5.(Original) The method of claim 4, wherein said unified audio signal comprises a second two track audio signal of higher resolution than said first two track audio signal.

6.(Original) The method of claim 4, wherein said unified audio signal comprises more than two channels.

7.(Original) A method for storing an audio signal of two or more channels, comprising:

deriving from the audio signal data, comprising:  
a plurality of digital signals, wherein a first of said plurality of digital signals is a first two track audio signal; and  
control information, wherein a reproduction of said audio information can be produced from said plurality of digital signals by use of said control information;  
storing said first digital signal on a first medium;

storing the remainder of said plurality of digital signals on one or more second media; and

storing the control information.

8.(Original) The method of claim 7, wherein said first medium is a rewritable memory.

9.(Original) The method of claim 8, further comprising:  
compressing said first digital signal prior to storing on said first medium.

10.(Original) The method of claim 7, wherein said first medium is the audio portion of a compact disk (CD), wherein said first digital signal can be reproduced on a conventional CD player.

11.(Original) The method of claim 10, wherein said one or more second media is the CD-ROM portion of said CD.

12.(Original) The method of claim 11, wherein said control information is stored in the CD-ROM portion of said CD.

13.(Original) The method of claim 7, wherein said audio signal comprises more than two channels.

14.(Original) The method of claim 7, wherein said reproduction of said audio signal comprises a second two track audio signal of higher resolution than a reproduction based on said first two track audio signal alone.

(Claims 15-32 have been cancelled.)

33 (Currently Amended) A method for recording a two channel audio signal, comprising:

providing a master recording;

deriving from said master recording a reduced digital reproduction of lower resolution than said master recording;

recording said reduced digital reproduction onto a first medium;

forming additional information, comprising:

a residual dependent upon the difference between said master recording and said reduced digital reproduction; and

control information, including data that can be used to recombine said residual with said reduced digital reproduction to reproduce said master recording;

recording said residual onto a location other than said first medium; and

recording said control information.

34.(Currently Amended) ~~The A method of claim 33 for recording a two channel audio signal, comprising:~~

providing a master recording;

deriving from said master recording a reduced digital reproduction of lower resolution than said master recording;

recording said reduced digital reproduction, wherein the recording of said reduced digital reproduction is performed onto the audio portion of a compact disk (CD) playable on a standard CD player;

forming additional information, comprising:

a residual dependent upon the difference between said master recording and said reduced digital reproduction; and

control information, including data that can be used to recombine said residual with said reduced digital reproduction to reproduce said master recording;

recording said residual onto a location other than the audio portion of said compact disk (CD) playable on a standard CD player; and

recording said control information.

35.(Currently Amended) ~~The A method of claim 34 for recording a two channel audio signal, comprising:~~

providing a master recording;  
deriving from said master recording a reduced digital reproduction of lower  
resolution than said master recording;  
recording said reduced digital reproduction, wherein the recording of said  
reduced digital reproduction is performed onto the audio portion of a compact disk (CD)  
playable on a standard CD player;  
forming additional information, comprising:  
a residual dependent upon the difference between said master recording  
and said reduced digital reproduction; and  
control information, including data that can be used to recombine  
said residual with said reduced digital reproduction to reproduce said master  
recording;  
recording said residual; and  
recording said control information, wherein the recording of said residual and  
the recording said control information are performed onto the CD-ROM portion of said CD.

36.(Original) The method of claim 34, wherein said master recording is a digital recording characterized by an original sampling frequency, and wherein the deriving of said reduced digital reproduction comprises downsampling said master recording to a lower sampling frequency.

37.(Original) The method of claim 36, further comprising:  
upsampling said reduced digital reproduction to said original sampling frequency prior to forming said residual.

38.(Original) The method of claim 34, wherein said master recording is a digital recording characterized by an original number of bits per sample, and wherein the deriving of said reduced digital reproduction comprises truncating said master recording to a lesser number of bits per sample.

39.(Original) The method of claim 34, wherein said master recording is characterized by an original sampling frequency and by an original number of bits per sample, and

wherein the deriving of said reduced digital reproduction comprises downsampling said master recording to a lower sampling frequency and truncating the resultant signal to a lesser number of bits per sample.

40.(Original) The method of claim 39, further comprising:  
upsampling said reduced digital reproduction to said original sampling frequency prior to forming said residual.

41.(Original) The method of claim 37, further comprising:  
adding dither to said reduced digital reproduction subsequent to downsampling said master recording but prior to recording reduced digital reproduction.

42.(Original) The method of claim 41, wherein said dither is reversible,  
further comprising:  
subtracting said dither prior to upsampling said reduced digital reproduction.

43.(Original) The method of claim 38, further comprising:  
adding dither to said reduced digital reproduction prior to truncating said master recording.

44.(Original) The method of claim 43, wherein said dither is reversible,  
further comprising:  
subtracting said dither prior to forming said residual.

45.(Original) The method of claim 40, further comprising:  
adding dither to said reduced digital reproduction prior to truncating said resultant signal.

46.(Original) The method of claim 45, wherein said dither is reversible,  
further comprising:  
subtracting said dither prior to upsampling said reduced digital reproduction.

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47.(Original) The method of any of claims 42, 44, or 46, wherein said control information further includes data which characterize how said dither can be reversed.

48.(Original) The method of claim 34, further comprising:  
compressing said residual prior to its recording.

49.(Original) The method of claim 48, wherein said control information further includes data on how the compressing is performed.

50.(Original) The method of claim 33, wherein the recording of said reduced digital reproduction is performed onto a rewritable memory.

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51.(Original) The method of claim 50, further comprising:  
compressing said reduced digital reproduction prior to its recording.

(Claims 52-70 have been cancelled.)

71.(Original) A method for storing an N-channel audio signal, wherein N is an integer greater than two, comprising:

deriving from said N-channel audio signal a two channel representation;

recording said two channel representation on a first medium;

forming additional information, comprising:

a residual dependent upon the difference between said N-channel audio signal and said two channel representation; and

control information, including data that can be used to recombine said residual with said two channel representation to reconstruct an M-channel representation of said N-channel audio signal, wherein M is greater than two but not greater than N;

recording said residual on one or more second media; and

recording said control information.

72.(Original) The method of claim 71, wherein said first media is the audio portion of a compact disk (CD), wherein said two channel representation can be reproduced on a conventional CD player.

73.(Original) The method of claim 72, wherein said recording of said control information is on said one or more second media, and wherein said one or more second media is the CD-ROM portion of said CD.

74.(Original) The method of claim 71, wherein M equals N.

75.(Original) The method of claim 74, wherein said residual contains (N-2) independent channels.

76.(Original) The method of claim 74, wherein said residual contains less than (N-2) independent channels.

77.(Original) The method of claim 71, further comprising:  
compressing said residual prior to its recording.

78.(Original) The method of claim 77, wherein control information contains data on how said residual is compressed.

79.(Original) The method of claim 71, wherein the deriving from said N-channel audio signal a two channel representation is based upon a linear combination of a finite set of spatial harmonics.

80.(Original) The method of claim 79, wherein said residual comprises a combination of zero and first order spatial harmonics which is linearly independent of said two channel representation.

81.(Original) The method of claim 71, wherein the recording of said first medium is a rewritable memory.

82.(Original) The method of claim 81, further comprising:  
compressing said two channel representation prior to its recording.

(Claims 83-88 have been cancelled.)

89.(Original) A method of storing N-channel audio data on a CD, wherein N is greater than two, comprising:

storing a two track reduction of said N-channel audio data, wherein said two track reduction is reproducible by playing said CD on a conventional audio CD player; and

storing control information on said CD; and

storing additional audio data on said CD outside of said audio portion, wherein said two track reduction and said additional audio information can be combined through use of said control information to reproduce an M-channel representation of said N-channel audio data, wherein M is greater than two but not greater than N.

90.(Original) The method of claim 89, wherein said additional audio information is compressed.

91.(Original) The method of claim 90, wherein control information contains data on how said additional audio information is compressed.

92.(Original) The method of claim 89, wherein M is equal to N.

93.(Original) The method of claim 92, wherein said additional audio information contains (N-2) independent channels.

94.(Original) The method of claim 92, wherein said additional audio information contains less than (N-2) independent channels.

(Claims 95-106 have been cancelled.)